

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1.-7. (Canceled)

8. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

a first step of forming a gate wiring over an insulating surface;

a second step of forming an insulating film covering the insulating surface and the gate wiring;

a third step of forming a first amorphous semiconductor film over the insulating film;

a fourth step of forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;

a fifth step of forming a ~~conductive~~ metal film ~~comprising metallic material~~ over the second amorphous semiconductor film;

a sixth step of etching the ~~conductive~~ metal film, the second amorphous semiconductor film and the first amorphous semiconductor film to form a side edge of the first amorphous semiconductor film into a taper shape;

a seventh step of forming a transparent conductive film ~~[[over]]~~ in contact with the ~~conductive~~ metal film; and

an eighth step of etching the transparent conductive film, the ~~conductive~~ metal film, the second amorphous semiconductor film and the first amorphous semiconductor film to expose a part of the first amorphous semiconductor film, to form a pixel electrode from the transparent conductive film, to form a source wiring from the ~~conductive~~ metal

film and to form a source region and a drain region from the second amorphous semiconductor film.

9. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

a first step of forming a gate wiring over an insulating surface;

a second step of forming an insulating film covering the insulating surface and the gate wiring;

a third step of forming a first amorphous semiconductor film over the insulating film;

a fourth step of forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;

a fifth step of forming a ~~conductive~~ metal film ~~comprising metallic material~~ over the second amorphous semiconductor film;

a sixth step of etching the ~~conductive~~ metal film, the second amorphous semiconductor film, the first amorphous semiconductor film and the insulating film to form a side edge of the first amorphous semiconductor film into a taper shape;

a seventh step of forming a transparent conductive film ~~[[over]]~~ in contact with the ~~conductive~~ metal film; and

an eighth step of etching the transparent conductive film, the ~~conductive~~ metal film, the second amorphous semiconductor film and the first amorphous semiconductor film to expose a part of the first amorphous semiconductor film, to form a pixel electrode from the transparent conductive film, to form a source wiring from the ~~conductive~~ metal film and to form a source region and a drain region from the second amorphous semiconductor film.

10. (Currently Amended) The method of manufacturing the semiconductor device according to one of claim 8 and claim 9, wherein in the sixth step, the ~~conductive~~

metal film, the second amorphous semiconductor film and the first amorphous semiconductor film are etched with a chlorine type gas.

11. (Currently Amended) The method of manufacturing the semiconductor device according to one of claim 8 and claim 9, wherein in the eighth step, the ~~conductive~~ metal film, the second amorphous semiconductor film and the first amorphous semiconductor film are etched with a chlorine type gas.

12. (Previously Presented) The method of manufacturing the semiconductor device according to claim 10, wherein the chlorine type gas contains at least one selected from the group consisting of Cl_2 , BCl_3 , HCl and SiCl_4 .

13. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

- forming a gate wiring over an insulating surface;
- forming an insulating film over the insulating surface and the gate wiring;
- forming a first amorphous semiconductor film over the insulating film;
- forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;
- forming ~~a conductive~~ one of an aluminum film and a titanium film over the second amorphous semiconductor film;
- etching the ~~conductive~~ one of the aluminum film and the titanium film, the second amorphous semiconductor film and the first amorphous semiconductor film to form a side edge of the first amorphous semiconductor film into a taper shape;
- forming a transparent conductive film ~~[[over]]~~ in contact with the ~~second amorphous semiconductor~~ one of the aluminum film and the titanium film; and

etching the transparent conductive film, the ~~conductive~~ one of the aluminum film and the titanium film and the second amorphous semiconductor film to form a pixel electrode, a source wiring, a source region and a drain region,

~~wherein the conductive film contains at least one of aluminum and titanium, and~~

wherein the first amorphous semiconductor film is etched into the taper shape with a mixture gas of Cl_2 and BCl_2 .

14. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

forming a gate wiring over an insulating surface;

forming an insulating film over the insulating surface and the gate wiring;

forming a first amorphous semiconductor film over the insulating film;

forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;

forming a ~~conductive~~ tantalum film over the second amorphous semiconductor film;

etching the ~~conductive~~ tantalum film, the second amorphous semiconductor film and the first amorphous semiconductor film to form a side edge of the first amorphous semiconductor film into a taper shape;

forming a transparent conductive film ~~[[over]]~~ in contact with the second amorphous semiconductor tantalum film; and

etching the transparent conductive film, the ~~conductive~~ tantalum film and the second amorphous semiconductor film to form a pixel electrode, a source wiring, a source region and a drain region,

~~wherein the conductive film contains at least tantalum, and~~

wherein the first amorphous semiconductor film is etched into the taper shape with a mixture gas of Cl_2 and CF_4 .

15. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

forming a gate wiring over an insulating surface;

forming an insulating film over the insulating surface and the gate wiring;

forming a first amorphous semiconductor film over the insulating film;

forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;

forming a ~~conductive~~ tungsten film over the second amorphous semiconductor film;

etching the ~~conductive~~ tungsten film, the second amorphous semiconductor film and the first amorphous semiconductor film to form a side edge of the first amorphous semiconductor film into a taper shape;

forming a transparent conductive film ~~[[over]]~~ in contact with the ~~second amorphous semiconductor~~ tungsten film; and

etching the transparent conductive film, the ~~conductive~~ tungsten film and the second amorphous semiconductor film to form a pixel electrode, a source wiring, a source region and a drain region,

~~wherein the conductive film contains at least tungsten, and~~

wherein the first amorphous semiconductor film is etched into the taper shape with one of a mixture gas of Cl_2 , CF_4 and O_2 and a mixture gas of Cl_2 , SF_6 and O_2 .

16. (Previously Presented) The method of manufacturing the semiconductor device according to claim 11, wherein the chlorine type gas contains at least one selected from the group consisting of Cl_2 , BCl_3 , HCl and SiCl_4 .

17. (Currently Amended) The method of manufacturing the semiconductor device according to any one of claims ~~13 through claim 15~~ 13 - 15, wherein a chlorine type gas is used in the step of etching the transparent conductive film, the ~~conductive~~

one of the aluminum film, the titanium film, the tantalum film and the tungsten film and the second amorphous semiconductor film.

18. (Previously Presented) The method of manufacturing the semiconductor device according to claim 17, wherein the chlorine type gas contains at least one selected from the group consisting of Cl_2 , BCl_3 , HCl and SiCl_4 .

19. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

forming a gate wiring over an insulating surface;

forming an insulating film covering the insulating surface and the gate wiring;

forming a first amorphous semiconductor film over the insulating film;

forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;

forming a conductive metal film ~~comprising metallic material~~ over the second amorphous semiconductor film;

etching the ~~conductive~~ metal film, the second amorphous semiconductor film and the first amorphous semiconductor film to form a side edge of the first amorphous semiconductor film into a taper shape;

forming a transparent conductive film ~~[[over]]~~ in contact with the ~~conductive~~ metal film; and

etching the transparent conductive film, the ~~conductive~~ metal film, the second amorphous semiconductor film and the first amorphous semiconductor film to expose a part of the first amorphous semiconductor film, to form a pixel electrode from the transparent conductive film, to form a source wiring from the ~~conductive~~ metal film and to form a source region and a drain region from the second amorphous semiconductor film.

20. (Currently Amended) A method of manufacturing a semiconductor device, comprising:

forming a gate wiring over an insulating surface;

forming an insulating film covering the insulating surface and the gate wiring;

forming a first amorphous semiconductor film over the insulating film;

forming a second amorphous semiconductor film containing an impurity element of one conductivity type over the first amorphous semiconductor film;

forming a ~~conductive~~ metal film ~~comprising metallic material~~ over the second amorphous semiconductor film;

etching the ~~conductive~~ metal film, the second amorphous semiconductor film, the first amorphous semiconductor film and the insulating film to form a side edge of the first amorphous semiconductor film into a taper shape;

forming a transparent conductive film ~~[[over]]~~ in contact with the ~~conductive~~ metal film; and

etching the transparent conductive film, the ~~conductive~~ metal film, the second amorphous semiconductor film and the first amorphous semiconductor film to expose a part of the first amorphous semiconductor film, to form a pixel electrode from the transparent conductive film, to form a source wiring from the ~~conductive~~ metal film and to form a source region and a drain region from the second amorphous semiconductor film.

21. (Currently Amended) The method of manufacturing the semiconductor device according to claim 19, wherein a chlorine type gas is used in the step of etching the ~~conductive~~ metal film, the second amorphous semiconductor film and the first amorphous semiconductor film.

22. (Currently Amended) The method of manufacturing the semiconductor device according to claim 20, wherein a chlorine type gas is used in the step of etching

the ~~conductive~~ metal film, the second amorphous semiconductor film, the first amorphous semiconductor film and the insulating film.

23. (Currently Amended) The method of manufacturing the semiconductor device according to one of claim 19 and claim 20, wherein a chlorine type gas is used in the step of etching the transparent conductive film, the ~~conductive~~ metal film, the second amorphous semiconductor film and the first amorphous semiconductor film.

24. (Previously Presented) The method of manufacturing the semiconductor device according to one of claim 19 and claim 20, wherein the chlorine type gas contains at least one selected from the group consisting of Cl_2 , BCl_3 , HCl and SiCl_4 .

25. (Previously Presented) The method of manufacturing the semiconductor device according to claim 23, wherein the chlorine type gas contains at least one selected from the group consisting of Cl_2 , BCl_3 , HCl and SiCl_4 .

26. (New) The method of manufacturing the semiconductor device according to one of claim 8 and claim 9, wherein the eighth step contains etching treatments using a chlorine type solution and etching gases.

27. (New) The method of manufacturing the semiconductor device according to any one of claims 13 - 15, wherein the latter etching step contains etching treatments using a chlorine type solution and etching gases.

28. (New) The method of manufacturing the semiconductor device according to one of claim 19 and claim 20, wherein the latter etching step contains etching treatments using a chlorine type solution and etching gases.